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(54) Support or clamp for cables

(57) A support for cables of the like comprises a substantially rigid channel-section member 1, open at the top so that it can be used as a simple hook support. One limb 3 of the channel has a hole or other provision for mounting, and the other has an elongate slot 10 extending perpendicular to the channel to enable an auxiliary clamping member 2 to be rigidly secured to it in any one of a range of positions if required. The auxiliary member may be secured by a single screw 15 with its shank extending through the elongate slot, and the slot preferably extends to the top edge of its limb of the channel so that the screw can be pre-fitted to the auxiliary member. Preferably there is an opening 6 in the first wall of the channel opposite the slot that remains accessible when the support is mounted, so that a flexible cable strap 9 can be passed through it and through the slot to secure cables to the base of the support when desired; this aperture may be an elongate hole that also receives a fixing screw. A resilient liner may be provided.

Fig.1.

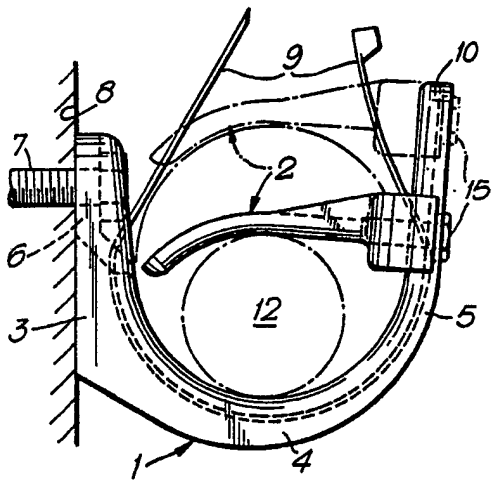

Fig.4.

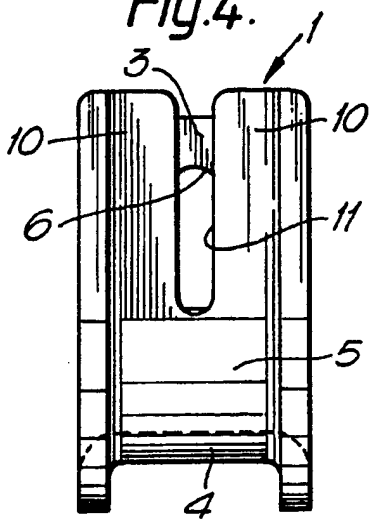

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Fig.1.

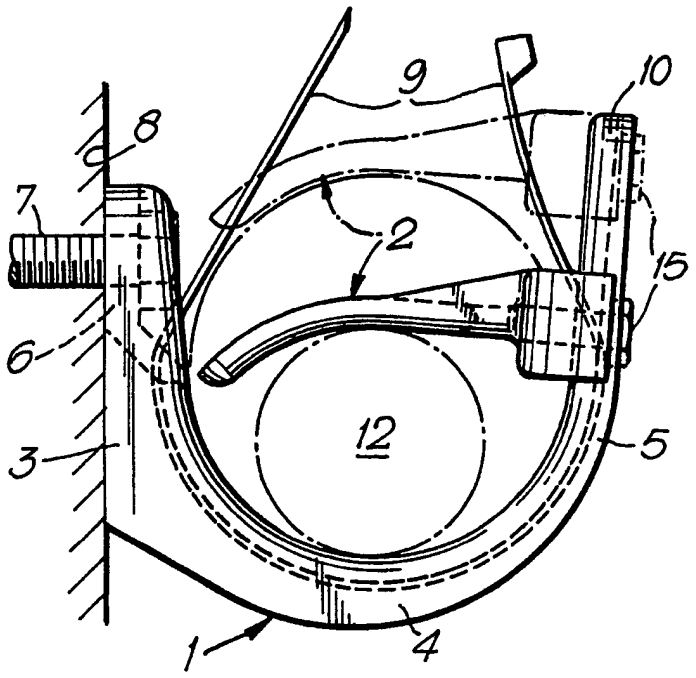

Fig.10.

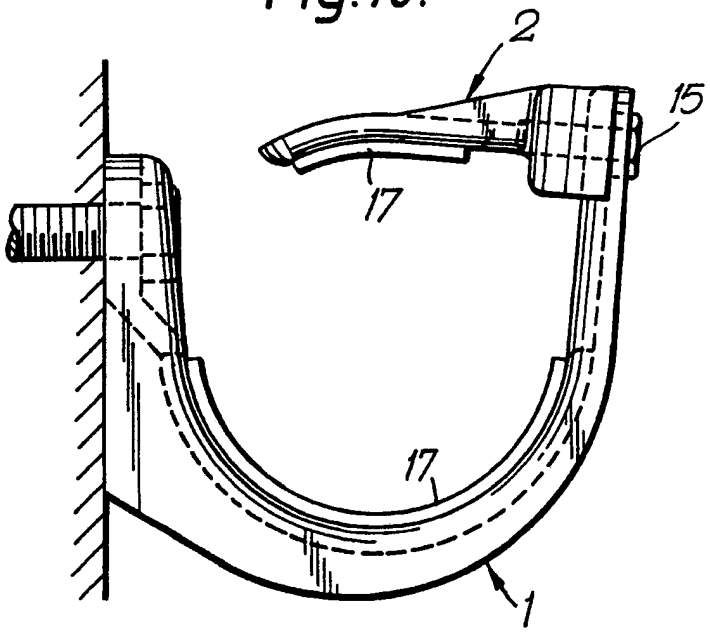

Fig.2.

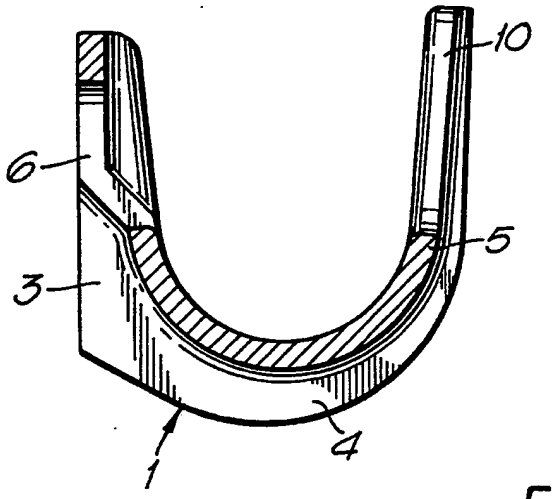

Fig.3.

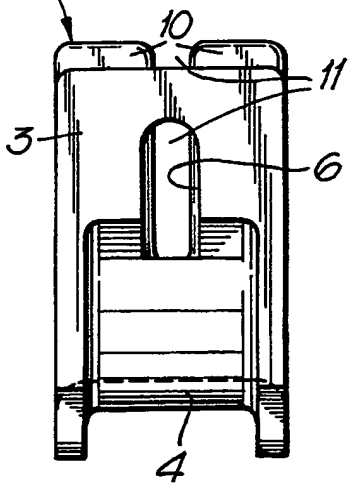

Fig.4.

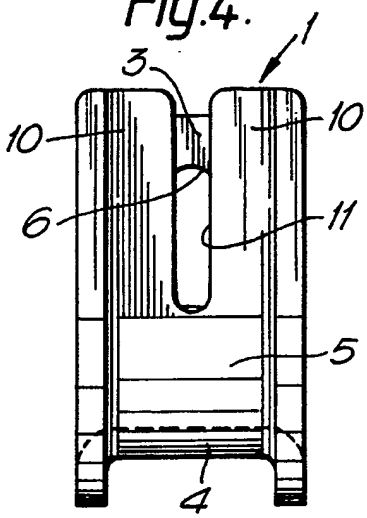

Fig.5.

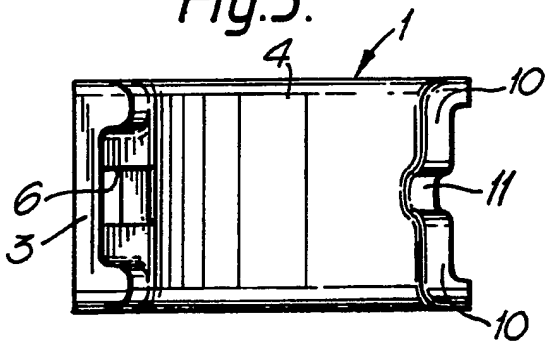

Fig.6.

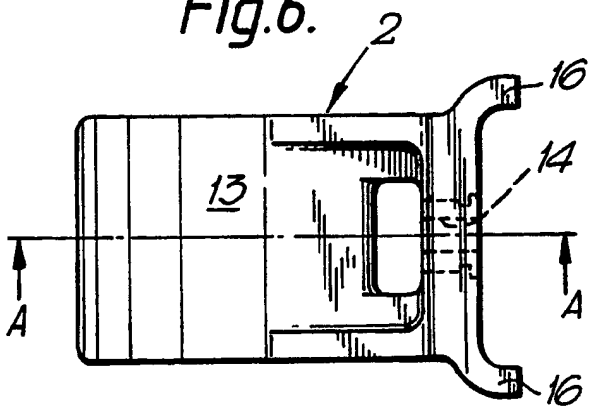

Fig.7.

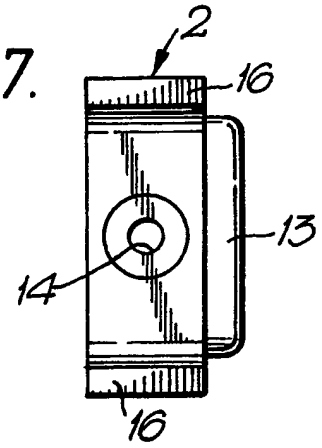

Fig.8.

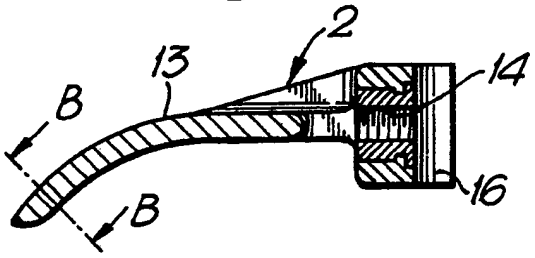

Fig.9.

SUPPORTS FOR CABLES AND LIKE ELONGATE BODIES

This invention relates to cable supports (also usable with pipes and other like elongate bodies) and more particularly to supports that can be used in more than one way.

Especially (but by no means exclusively) in railway installations, there is a need to install variable sizes and numbers of cables (and possibly pipes) in relatively inaccessible positions and to make alterations, when required, in a very short time to avoid disruption of services; but nevertheless security requirements may dictate that the cables (or the like) are positively gripped at some of the supports. At present cables and the like may be loosely supported by an open hook, tied to a suitable base by a flexible strap, or positively held by various kinds of cleat; but different supports are used and have to chosen at an early stage in the installation.

When design modifications are later made, the result may be that large numbers of supports have to be replaced because there are too few cleats and the installation has become insecure, or because there are too many cleats and recabling has become needlessly cumbersome.

The present invention provides a support that can be fficiently and economically be used as an open hook but which can also be used as a pre-fixed base for a bolted cleat support

or (optionally) for a flexibl strip fixing.

The cable support in accordanc with the invention comprises a substantially rigid channel-section member, open at the top for insertion and removal of cables or the like; the first limb of the channel provides means (such as at least one hole for a fixing screw) for rigidly securing the support on a wall or other mounting, and the second limb has an elongate slot extending perpendicular to the length of the channel to enable an auxiliary clamping member to be rigidly secured to it in any of a range of positions if required.

Preferably the first limb also has at least one aperture, preferably elongate and facing the slot in the second limb, which is accessible when the support is secured in a mounting so that a flexible strap can alternatively be used to secure cables or the like in position in the channel; this aperture may also serve as the mounting means.

Preferably the slot in the second limb of the channel extends to its top edge, so that the auxiliary member may be attached by pre-fitting a screw to a tapped hole therein, inserting the shank of the screw into the open end of the slot, positioning the auxiliary member to engage the cable(s) and/or other like members and then tightening the screw.

Preferably the auxiliary member engages one or both edges of the slot and/or a formation on the second limb of the support (such as its ends) extending parallel to the slot to inhibit rotation of the auxiliary member round its fixing screw (or alternatively two screws could be used in some cases).

Depending on size and strength requirements, the support (and the auxiliary member) may be diecast in aluminium alloy or

moulded in nylon, acetal or other suitable synth tic resin. Other materials and/or fabrication techniques can be used, if preferred. Aluminium or other metal parts may be coated with synthetic resin compositions to improve corrosion resistance. Synthetic resins (whether in mouldings or coatings) can be of low-smoke fire-resisting grades if the circumstances of the installation require it.

The invention includes the combination of the support described with the auxiliary member also described and its combination with a cable strap; it also includes cable and like installations in which the support and/or one or both of these combinations (but more especially more than one of these) is used.

The invention will be further described, by way of example, with reference to the accompanying drawings in which;

Figure 1 is a composite side view of one form of support in accordance with the invention showing it used both with an auxiliary member (shown at both extremes of its available movement) and with a flexible strap;

Figure 2 is a median cross-section of the support, parallel to the plane of figure 1;

Figures 3 & 4 are respectively back and front views;

Figures 5 is a plan;

Figures 6 & 7 are mutually perpendicular views of an auxiliary member for use with the support;

Figure 8 is a section on the line A-A in figure 6;

Figure 9 is a section on the line B-B in figure 8; and

Figures 10 is a side view of a modified support in accordance with the invention.

In the support of figures 1-9 made by diecasting from any suitable aluminium alloy, there is a first, essential, component 1 (figures 1 to 5) and an optional auxiliary component 2 (figures 1 and 6 to 9) used only when a positive clamping action is required.

Component 1 is a channel-section with its first limb 3 shown to the left, its base 4 at the bottom, and second limb 5 to the right. The first limb 3 has an aperture 6 whose primary function is to receive a screw 7 (figure 1) by which the support can be secured, for example on a masonry wall 8. However, the aperture 6 is elongate, so that even when the cleat is so mounted, a cable strap 9 (figure 1) can be freely passed through the aperture.

The second limb 5 terminates in pair of parallel-sided fingers 10 defining between them a parallel-sided open-ended slot 11 (figures 3-5), which faces the slot 6, so that when a flexible strap 9 (figure 1) has been threaded through the bottom of aperture 6 it can readily be passed through the slot 11 and tightened around a cable or group of cables 12.

As will be understood from the foregoing, the use of a strap 9 is optional, and besides the possibility of allowing the cables simply to rest in the base of the channel, they may instead by positively clamped using the auxiliary member 2 of figures 1 and 6 to 9. This comprises a claw-shaped body 13 having an insert 14 with a tapped opening to receive a fixing screw 15. The dimensions of the auxiliary member 2 and of the screw 15 are such that the auxiliary member, with the screw already in position, can be presented to the free end of th

limbs 10 slid downwards so that the shank of the screw enters the slot 11 and the head of the bolt 15, when tightened after the body 13 has engaged the cable or cables, engages the edges of the limbs 10, 10 to secure the auxiliary member in position. Flanges 16, 16 on the auxiliary member engage the outer edges of the limbs 10 to prevent the auxiliary member from rotating around the axis of the screw.

Since the only threaded hole required is in the auxiliary member 2, the facility for positively locking the clamp when required is provided without in any way increasing the cost of those supports for which this facility is not required, and the decision whether to use auxiliary member 2 or not for any particular support can be made after the main component 1 and the cables are in position, and can be altered later if required without requiring the main support component 1 to be removed and exchanged. Similarly, flexible straps 9 can be added or removed at will.

Figure 10 shows a modification in which the main component 1 of the support and the auxiliary member 2 are each provided with a liner of resilient polymeric material 17,17 to reduce the risk of damage to cables or other bodies supported. Flame-retardant grades of polymeric material, and more especially low-smoke-and-fume grades are to be preferred in any situation where significant fire hazard might arise.

CLAIMS

1. A cable support comprising a substantially rigid channel-section member, open at the top, its first limb having means for rigidly securing the support on a mounting and its second limb having an elongate slot extending perpendicular to the length of the channel.

2. A cable support as claimed in claim 1 in which the first limb also has at least one aperture facing the slot in the second limb which is accessible when the support is secured on a mounting so that a flexible strap can be used to secure cables in position in the channel.

3. A support as claimed in claim 2 in which the said aperture serves also as the mounting means.

4. A support as claimed as in any one of the preceding claims in which the said slot extends to the top edge of the second limb of the channel.

5. A support as claimed in any one of the preceding claims comprising a liner of resilient polymeric material.

6. A cable support substantially as described with reference to and as shown in figures 3 to 6 of the drawings.

7. A cable support substantially as described with reference to and as shown in Figure 11 of the drawings.

8. A cable support substantially as described with reference to and as shown in Figure 12 of the drawings.

9. The combination of the cable support as claimed in any one of claims 1 to 4 or claim 6 with an auxiliary clamping member secured to the second limb of the support by a screw extending through the said longate slot.

10. The combination as claimed in claim 9 in which th said

screw enters a tapped hole in the auxiliary member.

11. The combination as claimed in claim 9 or claim 10 in which the auxiliary member engages one or both edges of the slot and/or a formation on the second limb of the support extending parallel to the slot to inhibit rotation of the auxiliary member around the screw.

12. The combination of a cable support and auxiliary member substantially as described with reference to and as shown in figures 1 and 3 to 10 of the drawings.

13. The combination of a cable support as claimed in any one of claims 1-4 or claim 6 and a flexible cable strap.

14. The combination of a cable support and flexible strap substantially as described with reference to and as shown in figure 2 of the drawings.

15. An installation of cables and/or like flexible members including at least one of the supports claimed in any one of claims 1 to 4 or claim 6, the combination claimed in any one of claims 9 to 12 or the combination claimed in claim 13 or claim 14.

16. An installation of cables or like flexible members including combinations as claimed in any one of claims 9 to 12 and either supports as claimed in any one of claims 1 to 4 or claim 6 or the combination claimed in claim 13 or claim 14.

17. An installation of cables of like flexible members including at least one support as claimed in any one of claims 1 to 4 or claim 6 and also at least one combination as claimed in any one of claims 9 to 12 and also at least one combination claimed in claim 13 or claim 14.

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